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Paul D. Shirley

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EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PAUL D. SHIRLEY

Appeal 2010-008483
Application 10/773,968
Technology Center 1700

Before CHUNG K. PAK, CATHERINE Q. TIMM, and
KAREN M. HASTINGS, *Administrative Patent Judges*.

HASTINGS, *Administrative Patent Judge*.

DECISION ON APPEAL¹

STATEMENT OF CASE

Appellant appeals under 35 U.S.C. § 134 from the Examiner's
decision to reject claims 1-20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

Claim 1 is representative of the claimed subject matter, reproduced below:

1. A device for depositing resist onto a substrate, said device comprising:
 - a rotatable substrate support comprising a first surface onto which a layer of solvent-containing resist may be deposited;
 - a resist dispenser fluidly adjacent said first surface for depositing said layer on said first surface;
 - a control fluid supply configured to impart a substantially solvent-free gaseous control fluid onto a portion of said deposited layer such that said gaseous control fluid emanating from said supply effects a local change in evaporation rate of said deposited layer; and
 - a controller configured to vary the placement of said gaseous control fluid onto said deposited layer of resist to effect a substantially uniform thickness layer thereof.

The Examiner maintains, and Appellant seeks review of, the following rejections:

1. The rejection of claims 1, 2, 16, and 18-20 as anticipated under 35 U.S.C. §102(b) by Fujimoto (US 5,939,139; issued August 17, 1999).
2. The rejection of claims 3 and 4 as unpatentable under 35 U.S.C. § 103(a) over Fujimoto and Tateyama (US 5,919,520; issued July 6, 1999).
3. The rejection of claims 1-7, 10, 12-18, and 20 as anticipated under 35 U.S.C. §102(b) by Tateyama.
4. The rejection of claims 8 and 9 as unpatentable under 35 U.S.C. § 103(a) over Tateyama and Matsuyama (US 2002/0176936 A1; published November 28, 2002).
5. The rejection of claim 11 as unpatentable under 35 U.S.C. § 103(a) over Tateyama and Chappa (US 7,077,910 B2; issued July 18, 2006).

6. The rejection of claim 19 as unpatentable under 35 U.S.C. § 103(a) over Tateyama and Fujimoto.

DISPOSITIVE ISSUES

The contention for rejections 1-2 based on Fujimoto as the primary reference is the same: Appellant contends that the Examiner has failed to demonstrate that Fujimoto teaches, directly or inherently, a resist dispenser and a control fluid supply as claimed (App. Br. 5; Reply Br. 2). As Appellant does not argue any claim apart from the others, we select claim 1 as representative for deciding the first issue on appeal.

The first issue on appeal for the rejections 1-2 is: Does the evidence as a whole support the Examiner's finding that Fujimoto describes a device for depositing resist onto a substrate having a resist dispenser and a control fluid supply "configured to impart . . . fluid onto a portion of" on the deposited layer so as to "effect a local change in the evaporation rate" the deposited resist layer as required by claim 1?

We answer this question in the affirmative.

Similarly, the main contention for rejections 3-6 based on Tateyama as the primary reference is: Does the evidence as a whole support the Examiner's finding that Tateyama describes a device for depositing resist onto a substrate having a control fluid supply "configured to impart . . . fluid onto a portion of" on the deposited layer so as to "effect a local change in the evaporation rate" as required by claim 1?

We also answer this question in the affirmative.

PRINCIPLES OF LAW

A product or apparatus must be distinguished from the prior art in terms of structure, rather than function. *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997).

Where there is reason to believe that the prior art structure possesses all the claimed characteristics including the capability of performing the claimed function, the burden shifts to the applicant to show that the claimed function, in fact, structurally distinguishes the claimed apparatus from the prior art apparatus. *Schreiber*, 128 F.3d at 1478; *In re Hallman*, 655 F.2d 212, 215 (CCPA 1981); *In re Ludtke*, 441 F.2d 660, 664 (CCPA 1971).

ANALYSIS

with Findings of Fact

With respect to rejections 1-2, Appellant argues that that the Examiner has not provided a reasonable basis to conclude that the solvent dispensing nozzle 21 is a resist dispenser (Reply Br. 1-2). However, the Examiner in the Final Rejection mailed May 6, 2009 relied upon nozzle 11, not nozzle 21, of Fujimoto as the resist dispenser (Final Rej. 2).² Appellants did not dispute the Examiner's finding that nozzle 11 of Fujimoto may reasonably be construed as a resist dispenser (App. Br. *generally*).

Accordingly, the key question at issue for rejections 1-2 is whether the language "effects a local change in the evaporation rate" in claim 1 structurally distinguishes the claimed control fluid supply from the control

² The Examiner only refers to nozzle (21) as a resist dispenser in response to Appellant's Brief (Ans. 4 and 10), and does not repudiate the finding that nozzle (11) is a resist dispenser. We find that the evidence supports the Examiner's finding that nozzle (11) is a resist dispenser.

fluid supply nozzle 22 described by Fujimoto. The Examiner has provided a reasonable basis to conclude, based upon the structure of the air nozzle 22 on the moveably supported arm as described, is inherently capable of effecting a local change in the evaporation rate of the deposited resist layer (Ans. 9).

Because the Examiner's finding of inherent capability was reasonable, the burden shifted to Appellant to show that, in fact, the "effects a local change in the evaporation rate" language of the claim patentably structurally distinguishes the claimed control fluid supply from that of Fujimoto. Appellant's arguments that Fujimoto does not expressly teach the recited function are irrelevant to the issue (App. Br. 6-7; Reply Br. 2). The nozzle need only have a structure allowing it to be capable of the claimed function. A local change in the evaporation rate need not actually occur for the prior art to meet the structural limitations of the claim.

The key question at issue for rejections 3-6 is similarly whether the language "effects a local change in the evaporation rate" in claim 1 structurally distinguishes the claimed control fluid supply from the control fluid supply described by Tateyama. The Examiner has provided a reasonable basis to conclude, based upon the structure of the air nozzle 80 on the moveable beam 20, that the nozzle 80 is inherently capable of effecting a local change in the evaporation rate of the deposited resist layer.

Because the Examiner's finding of inherent capability was reasonable, the burden shifted to Appellant to show that, in fact, the "effects a local change in the evaporation rate" language of the claim patentably structurally distinguishes the claimed control fluid supply from that of Tateyama.

Appellant's arguments that Tateyama does not expressly teach the recited function are irrelevant to the issue (App. Br. 7; Reply Br. 3). The nozzle need only have a structure allowing it to be capable of the claimed function. A local change in the evaporation rate need not actually occur for the prior art to meet the structural limitations of the claim.

Appellant's argument that the structure of Tateyama is not capable of this function because air nozzle 80 has a plurality of holes along the entire length of the moveable beam 20 is unavailing, since as stated by the Examiner the structure of the nozzle 80 would reasonably be capable of effecting a local change in evaporation at each location as it traverses the wafer (Ans. 10, 11). The Specification fails to explicitly define how much or how little area may be within a "portion" so as to effect a "local change" as required by claim 1. Indeed, in this regard, we note that Appellant's Specification describes that multiple nozzles "can be employed to *increase* or tailor area coverage" of the control fluid supply used to dry the resist layer (Spec. 11:30-31; emphasis added). The nozzle 80 of Tateyama is also used for drying the surface of the wafer (Tateyama col. 8, ll. 39-58). Accordingly, the Examiner's position that the claimed limitation at issue does not distinguish over the increased coverage provided by the plurality of holes of the air nozzle 80 of Tateyama is reasonable.

Appellant's contention that the rejection of claims 8 and 9 is improper because Matsuyama does not teach a control fluid (App. Br. 8-9) is unpersuasive for the reasons set forth by the Examiner, that is, that Matsuyama was not relied upon to teach this feature (Ans. 12).

CONCLUSION

On the record before us, we sustain all of the rejections of the claims as maintained by the Examiner.

DECISION

The decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

tc

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